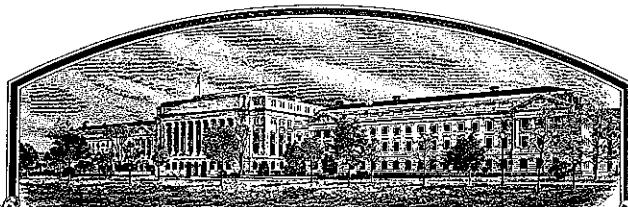


No.



# THE UNITED STATES OF AMERICA

**TO ALL TO WHOM THESE PRESENTS SHALL COME:**

The Board of Trustees of the University of Illinois

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED, PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSE, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. IN THE UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS A LOT OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS SPECIFIED BY THE OWNER OF THE VARIETY. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

WHEAT, COMMON

'Kaskaskia'

In Testimony Whereof, I have hereunto set my hand  
and caused the seal of the Plant Variety  
Protection Office to be affixed at the City of  
Washington, D.C. this thirty-first day of March,  
in the year of our Lord two thousand.

Attest:

John Marie S.

Commissioner  
Plant Variety Protection Office  
Agricultural Marketing Service

Secretary of Agriculture  
*Tom H. Hildebrand*

PLANT VARIETY PROTECTION  
U.S. DEPARTMENT OF AGRICULTURE

REPRODUCE LOCALLY. Include form number and date on all reproductions.

FORM APPROVED - OMB NO. 0581-0055

U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
SCIENCE AND TECHNOLOGY DIVISION - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions and information collection burden statement on reverse)

1. NAME OF APPLICANT(S) (as it is to appear on the Certificate)

The Board of Trustees of the  
University of Illinois

The following statements are made in accordance with the Privacy Act of  
1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection  
certificate is to be issued (7 U.S.C. 2421). Information is held confidential  
until certificate is issued (7 U.S.C. 2426).

4. ADDRESS (Street and No., or P.O. Box, City, State, and ZIP Code, and Country)

506 S. Wright Street  
Urbana, IL 61801

2. TEMPORARY DESIGNATION OR  
EXPERIMENTAL NUMBER

IL90-7514

3. VARIETY NAME

(To be determined  
Kashkashia

Per letter  
of 9/16/99  
MTH 10-18-9

6. TELEPHONE (Include area code)

(217) 333-1920

FOR OFFICIAL USE ONLY

PVPO NUMBER

F

I

L

E

N

G

9800145

03/03/1998

FILING AND EXAMINATION FEE:

FEE \$ 2450.00

DATE -

3 March 1998

CERTIFICATION FEE:

FEES REC'D

DATE 300

DATE 11/15/99

7. GENUS AND SPECIES NAME

Triticum aestivum

8. FAMILY NAME (Botanical)

Gramineae

9. CROP KIND NAME (Common name)

Soft Red Winter Wheat

10. IF THE APPLICANT NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION (corporation, partnership, association, etc.) (Common name)  
The University of Illinois is a public corporation of the State of Illinois

11. IF INCORPORATED, GIVE STATE OF INCORPORATION

12. DATE OF INCORPORATION

13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS

David L. Chicoine & John W. Erdman  
Dean & Interim Associate Dean, Research  
1301 W. Gregory, 114a Mumford Hall  
University of Illinois, Urbana, IL 61801

14. TELEPHONE (Include area code)

(217) 333-0460

15. FAX (Include area code)

(217) 244-2911

16. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow Instructions on reverse)

- Exhibit A. Origin and Breeding History of the Variety
- Exhibit B. Statement of Distinctness
- Exhibit C. Objective Description of the Variety
- Exhibit D. Additional Description of the Variety (Optional)
- Exhibit E. Statement of the Basis of the Applicant's Ownership
- Voucher Sample (2,500 viable untreated seeds or, for tuber propagated varieties verification that tissue culture will be deposited and maintained in an approved public repository)
- Filing and Examination Fee (\$2,460), made payable to "Treasurer of the United States" (Mail to PVPO)

17. DOES THE APPLICANT SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY, AS A CLASS OF CERTIFIED SEED? (See Section 83(a) of the Plant Variety Protection Act)  
 YES (if "yes," answer items 18 and 19 below)  NO (if "no," go to item 20)

18. DOES THE APPLICANT SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?

YES  NO

19. IF "YES" TO ITEM 18, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?

FOUNDATION  REGISTERED  CERTIFIED

20. HAS THE VARIETY OR A HYBRID PRODUCED FROM THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES?

YES (if "yes," give names of countries and dates)  NO

Released by the University of Illinois in the U.S. - March 5, 1997

21. The applicant(s) declare that a viable sample of basic seed of the variety will be furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety, a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.

The undersigned applicant(s) or owner(s) of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Applicant(s) inform(s) that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT (Owner(s))

John W Erdman Jr

NAME (Please print or type)

John W Erdman Jr

CAPACITY OR TITLE

Director / Assoc. Dean

DATE

2/27/98

Exhibit AOrigin and Breeding History of IL90-7514

1) IL90-7514 (now named Kaskaskia) was developed by the University of Illinois Agricultural Experiment Station. The pedigree of IL90-7514 is: IL77-2933 / IL77-3956 // Pike / Caldwell. The pedigree of IL77-2933 is IL70-2255 / CI 13855 // McNair 48-23, and the pedigree of IL77-3956 is Arthur / Blueboy // TN 1571. The pedigree of IL70-2255 is 61U-213 / CItr 13855. The pedigree of 61U-213 is unknown (the records for this line have been lost). Pedigree information on CI 13855 and TN 1571 are available on the GRIN. The pedigree of CI 13855 (CItr13855) is Norin 10 /3/ Nebraska 60 // Mediterranean / Hope. The pedigree of TN 1571 is Norin 10 / R4746A6 // Lucas.

IL90-7514 was first selected in 1990 as a headrow from a single F<sub>4</sub> plant. Heads were selected from a single plot of IL90-7514 in 1992 (F<sub>6</sub>) and a single headrow selected in 1993. Individual heads were again selected from the F<sub>8</sub> grown in 1994. Forty-eight headrows were grown in 1995, ten headrows that differed in appearance, maturity or height from the majority were removed and the remaining 38 were harvested in bulk.

Breeding History and Evaluation Summary for IL90-7514

- 1987 Final cross (87WX164) made in the greenhouse (winter 19986-87).
- 1987 F<sub>1</sub> plants grown in the field.
- 1988 F<sub>2</sub> bulk population grown in the field.
- 1989 F<sub>3</sub> bulk population grown and individual heads selected from the bulk.
- 1990 F<sub>4</sub> headrows grown and a single F<sub>4</sub> headrow selected and designated IL90-7514.
- 1991 F<sub>5</sub> single plot grown and evaluated.
- 1992 Evaluated in replicated performance trial at one location in Illinois. Heads (F<sub>6</sub>) selected from one plot.
- 1993 Evaluated in replicated performance trials at two locations in Illinois. Reselection headrows grown and one headrow selected (F<sub>7</sub>).
- 1994 Evaluated in replicated performance trial at three locations in Illinois. Small increase produced from 1993 reselected headrow (F<sub>8</sub>). About 50 heads were individually harvested from the small increase.
- 1995 Evaluated in replicated performance trial at three locations in Illinois, and at six locations in the Illinois Variety Trial. Forty-eight F<sub>9</sub> headrows

- were grown, ten headrows that differed from the majority were removed and the remaining 38 harvested in bulk.
- 1996 Evaluated in replicated performance trial at two locations in Illinois, at four locations in the Illinois Variety Trial, and in the Uniform Eastern Soft Red Winter Wheat Nursery.  $F_{10}$  seed increase grown from seed harvested from headrows grown in 1995.
- 1997 Evaluated in replicated performance trial at three locations in Illinois, at six locations in the Illinois Variety Trial, and in the Uniform Eastern Soft Red Winter Wheat Nursery.  $F_{11}$  Foundation Seed increase grown by Illinois Foundation Seeds, Inc.

*'Kaskaskia'*

per letter of 9/16/99  
MAB 10-18-1999

2) Breeder seed of IL90-7514 produced in 1996 was  $F_{10}$ . The seed was increased in 1997. The fields were inspected and a few variants rogued. The exact number of plants rogued from increases was not recorded, nor was the total number of plants grown in each generation determined; however, in each generation the number of variants rogued was much less than 0.5 % of the total number of plants.

3) IL90-7514 has been stable and true-breeding for at least three generations ( $F_9$  to  $F_{11}$ ); however, up to 0.5 % other types, including tall variants are allowed. Except for the difference in height, the tall variants are similar in appearance to the majority of the plants in the variety.

4) The performance of IL90-7514 was tested in breeding nursery trials in Illinois from 1992 - 1997, in variety testing trials in Illinois from 1995 - 1997, and for two years in the Uniform Eastern Soft Red Winter Wheat Nursery from 1996 - 1997.

5) IL90-7514 is high-yielding, has excellent winter hardiness, and has high test weight. IL90-7514 was selected in comparison to popular varieties in Illinois, including Howell and Cardinal. IL90-7514 is similar to Howell in test weight and winter hardiness. IL90-7514 has a moderate level of tolerance to head scab (*Fusarium graminearum* Schwabe). Performance data for IL90-7514 is presented in Tables 1-8.

**Exhibit B****Statement of Distinctness**

'Kaskaskia'

**H-90-7514** is an awned, white-chaffed, soft red winter wheat cultivar. It is similar to Cardinal in maturity and height and yield is equal to or better than Cardinal in Illinois.

per letter of  
9-16-99  
MATH 10-16-99

IL90-7514 can be distinguished from many soft red winter wheat varieties, including Cardinal, Caldwell, Clark, Ernie, Foster, Freedom, Grant, Madison, and Patterson, because it is awned.

IL90-7514 is most similar to Howell. IL90-7514 is easily distinguished from Howell and many other awned soft red winter wheat varieties by a unique twisting of the flag leaves. The flag leaves of IL90-7514 twist and curl lengthwise. This is not a response to drought or heat stress; it occurs in the absence of heat and drought stress. The attached photograph (Figure 1.) illustrates this flag leaf twisting and curling. This characteristic has been observed in numerous trials in many environments over several years and locations.

9800145



'Kaskaskia'

Figure 1. Photograph of H90-7514 showing unique lengthwise curling and rolling of the flag leaves. Photograph is from 1997 Urbana, Illinois field plots.

per letter of  
9-26-99  
MHT 10-16-99

U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
SCIENCE DIVISION  
BELTSVILLE, MARYLAND 20705

EXHIBIT  
(Wheat)

**OBJECTIVE DESCRIPTION OF VARIETY**  
**WHEAT (*Triticum spp.*)**

<b>NAME OF APPLICANT(S)</b> The Board of Trustees of the University of Illinois	<b>FOR OFFICIAL USE ONLY</b> <b>PVPO NUMBER</b> 9800145
<b>ADDRESS (Street and No. or R.F.D. No., City, State, and Zip Code)</b> 506 S. Wright Street Urbana, IL 61801	<b>VARIETY NAME</b> <i>Kaskaskia</i> <i>(to be determined)</i> <i>Permit 9-16-99</i> <i>MA 10-18-1999</i>
<b>TEMPORARY OR EXPERIMENTAL DESIGNATION</b> IL90-7514	

**PLEASE READ ALL INSTRUCTIONS CAREFULLY:** Place the appropriate number that describes the varietal character of this variety in the boxes below. Place a zero in the first box (e.g.  or ) when number is either 99 or less or 9 or less respectively. Data for quantitative plant characters should be based on a minimum of 100 plants. Comparative data should be determined from varieties entered in the same trial. Royal Horticultural Society or any recognized color standard may be used to determine plant colors; designate system used: \_\_\_\_\_  
Please answer all questions for your variety; lack of response may delay progress of your application.

**1. KIND:**

1=Common      2=Durum      3=Club      4=Other (SPECIFY) \_\_\_\_\_

**2. VERNALIZATION:**

1=Spring      2=Winter      3=Other (SPECIFY) \_\_\_\_\_

**3. COLEOPTILE ANTHOCYANIN:**

1=Absent      2=Present

**4. JUVENILE PLANT GROWTH:**

1=Prostrate      2=Semi-erect      3=Erect

**5. PLANT COLOR (boot stage):**

1 = Yellow-Green      2 = Green      3 = Blue-Green      Not determined

**6. FLAG LEAF (boot stage):**

1 = Erect      2 = Recurved

1 = Not Twisted      2 = Twisted

**7. EAR EMERGENCE:**

0	1
---	---

Number of Days Earlier Than \_\_\_\_\_ Cardinal \_\_\_\_\_ \*

--	--

Number of Days Later Than \_\_\_\_\_ \*

**8. ANTER COLOR:**

1 = YELLOW      2 = PURPLE

**9. PLANT HEIGHT (from soil to top of head, excluding awns):**

0	1
---	---

cm Taller Than \_\_\_\_\_ Cardinal \_\_\_\_\_ \*

--	--

cm Shorter Than \_\_\_\_\_ \*

9800145

Exhibit C (Wheat)

## 10. STEM:

## A. ANTHOCYANIN

- 1 = Absent      2 = Present

## B. WAXY BLOOM

- 1 = Absent      2 = Present

## C. HAIRINESS (last internode of rachis) peduncle??

- 1 = Absent      2 = Present

D. INTERNODE (SPECIFY NUMBER) upper

- 1 = Hollow      2 = Semi-solid      3 = Solid

## E. PEDUNCLE

- ??  1 = Absent      2 = Present

cm Length

## 11. HEAD (at Maturity):

## A. DENSITY

- 1 = Lax      2 = Middense      3 = Dense

## B. SHAPE

- 1 = Tapering      2 = Strap      3 = Clavate      4 = Other (SPECIFY) \_\_\_\_\_

## C. CURVATURE

- 1-2      1 = Erect      2 = Inclined      3 = Recurved

## D. AWNEDNESS

- 4      1 = Awnless      2 = Apically Awnletted      3 = Awnletted      4 = Awed

## 12. GLUMES (at Maturity):

## A. COLOR

- 2      1 = White      2 = Tan      3 = Other (SPECIFY) \_\_\_\_\_

## B. SHOULDER

- 2      1 = Wanting      2 = Oblique      3 = Rounded      4 = Square      5 = Elevated      6 = Apiculate

## C. BEAK

- 3      1 = Obtuse      2 = Acute      3 = Acuminate

## D. LENGTH

- 3      1 = Short (ca. 7mm)      2 = Medium (ca. 8mm)      3 = Long (ca. 9mm)

## E. WIDTH

- 3      1 = Narrow (ca. 3mm)      2 = Medium (ca. 3.5mm)      3 = Wide (ca. 4mm)

## 13. SEED:

## A. SHAPE

- 1      1 = Ovate      2 = Oval      3 = Elliptical

## B. CHEEK

- 1      1 = Rounded      2 = Angular

## C. BRUSH

- 2      1 = Short      2 = Medium      3 = Long

- 1      1 = Not Collared      2 = Collared

## D. CREASE

- 1      1 = Width 60% or less of Kernel  
2 = Width 80% or less of Kernel  
3 = Width Nearly as Wide as Kernel

- 3      1 = Depth 20% or less of Kernel  
2 = Depth 35% or less of Kernel  
3 = Depth 50% or less of Kernel

## 13. SEED: (continued)

## E. COLOR

1 = White

2 = Amber

3 = Red

4 = Other (SPECIFY) \_\_\_\_\_

## F. TEXTURE

1=Hard

2=Soft

## G. PHENOL REACTION (see instructions):

1 = Ivory

2 = Fawn

3 = Light Brown

4 = Dark Brown

5 = Black

14. DISEASE: (0=Not Tested; 1=Susceptible; 2=Resistant; 3=Intermediate; 4=Tolerant)  
PLEASE INDICATE THE SPECIFIC RACE OR STRAIN TESTEDStem Rust (*Puccinia graminis f. sp. tritici*)

\_\_\_\_\_

Stripe Rust (*Puccinia striiformis*)

\_\_\_\_\_

Tan Spot (*Pyrenophora tritici-repentis*)

\_\_\_\_\_

Halo Spot (*Selenophoma donacis*)

\_\_\_\_\_

## Septoria nodorum (Glume Blotch)

\_\_\_\_\_

## Septoria avenae (Speckled Leaf Disease)

\_\_\_\_\_

## Septoria tritici (Speckled Leaf Blotch)

\_\_\_\_\_

Scab (*Fusarium spp.*)

\_\_\_\_\_

## "Black Point" (Kernel Smudge)

\_\_\_\_\_

## Barley Yellow Dwarf Virus (BYDV)

\_\_\_\_\_

## Soilborne Mosaic Virus (SBMV)

\_\_\_\_\_

## Wheat Yellow (Spindle Streak) Mosaic Virus

\_\_\_\_\_

## Wheat Streak Mosaic Virus (WSMV)

\_\_\_\_\_

## Other (SPECIFY) \_\_\_\_\_

\_\_\_\_\_

## Other (SPECIFY) \_\_\_\_\_

\_\_\_\_\_

## Other (SPECIFY) \_\_\_\_\_

\_\_\_\_\_

Leaf Rust (*Puccinia recondita f. sp. tritici*)

R-TFBL, CBTB, SCJB, MCDL

S-TLGG, MBRL, NCDL

Loose Smut (*Ustilago tritici*)

\_\_\_\_\_

Flag Smut (*Urocystis agropyri*)

\_\_\_\_\_

Common Bunt (*Tilletia tritici* or *T. laevis*)

\_\_\_\_\_

Dwarf Bunt (*Tilletia controversa*)

\_\_\_\_\_

Karnal Bunt (*Tilletia indica*)

\_\_\_\_\_

Powdery Mildew (*Erysiphe graminis f. sp. tritici*)

S to most isolates

## "Snow Molds"

\_\_\_\_\_

Common Root Rot (*Fusarium, Cochliobolus* and *Bipolaris spp.*)

\_\_\_\_\_

Rhizoctonia Root Rot (*Rhizoctonia solani*)

\_\_\_\_\_

Black Chaff (*Xanthomonas campestris* pv. *translucens*)

\_\_\_\_\_

Bacterial Leaf Blight (*Pseudomonas syringae* pv. *syringae*)

\_\_\_\_\_

Other (SPECIFY) Fusarium Head Scab (Fusarium *graminearum*)

\_\_\_\_\_

## Other (SPECIFY) \_\_\_\_\_

\_\_\_\_\_

## Other (SPECIFY) \_\_\_\_\_

\_\_\_\_\_

## Other (SPECIFY) \_\_\_\_\_

\_\_\_\_\_

9800145

Exhibit C (Wheat)

15. INSECT: (0=Not Tested; 1=Susceptible; 2=Resistant; 3=Intermediate; 4=Tolerant)

## PLEASE SPECIFY BIOTYPE (where needed)

Hessian Fly (*Mayetiola destructor*) 1

S Biotypes GP, B, C, D, E, &amp; L

Other (SPECIFY) \_\_\_\_\_

Stem Sawfly (*Cephus spp.*) 0

Other (SPECIFY) \_\_\_\_\_

Cereal Leaf Beetle (*Oulema melanopa*) 0

Other (SPECIFY) \_\_\_\_\_

Russian Aphid (*Diuraphis noxia*) 0

Other (SPECIFY) \_\_\_\_\_

Greenbug (*Schizaphis graminum*) 0

Other (SPECIFY) \_\_\_\_\_

Aphids

 0

Other (SPECIFY) \_\_\_\_\_

## 16. ADDITIONAL INFORMATION ON ANY ITEM ABOVE, OR GENERAL COMMENTS:

A very distinct characteristic of this variety is the twisting of the flag leaves. This may be more pronounced under drought or heat stress, but also occurs in the absence of heat or drought stress. Flag leaves are twisted or curled lengthwise (see photograph attached).

Exhibit DAdditional Description of the Variety

Kaskaskia

IL90-7514 has excellent winter hardiness and excellent test weight. Test weight of IL90-7514 has averaged 2.8 pounds per bushel more than Cardinal in 22 tests in Illinois.

per letter of  
9-16-1999  
M.A.H.  
10-18-1999

IL90-7514 is moderately resistant to soil borne wheat mosaic virus and wheat spindle streak mosaic virus, and resistant to some races of leaf rust (*Puccinia recondita*, Rob. ex Desm. f. sp. *tritici*). IL90-7514 is susceptible to stem rust (*Puccinia graminis*, Pers. f. sp. *tritici* Eriks. & Henn.), and powdery mildew (*Erysiphe graminis*, DC. f. sp. *tritici* E. Marchal). IL90-7514 is susceptible to biotypes B, C, D, E, GP and L of the Hessian fly (*Mayetiola destructor*, Say). It has not been evaluated with other biotypes of Hessian fly.

Based on data from the USDA Soft Wheat Quality Laboratory, Wooster, Ohio the milling and baking quality of IL90-7514 is acceptable (Table 8.).

Table 1. Performance of IL90-7514, Cardinal, Caldwell and Pioneer brand 2548 in the 1996 Uniform Eastern Soft Red Winter Wheat Nursery.

	Yield (Bu/A)	Test Weight (lbs/bu)	Heading (d after 1/1)	Height (in)	Lodging (0-9)	Winter Kill (0-9)	Winter Survival (%)	Scab (0-9)	Septoria (0-9)	Leaf Rust (0-9)	Stem Rust (0-9)
IL90-7514 ('Kas Kas Kia')	69 (3)	58.1 (3)	139 (21)	38	1.6	1.8	60.8	4.8	5.0	0.0	1.0
Cardinal	60 (11)	55.3 (19)	140 (26)	38	1.4	3.2	51.7	3.3	4.7	2.5	3.9
Caldwell	59 (14)	55.2 (21)	138 (13)	36	1.6	2.8	54.0	5.8	5.9	0.5	0.9
P 2548	62 (6)	55.8 (15)	137 (11)	32	0.9	3.1	43.8	3.6	4.5	2.0	1.4
No. of Tests	25	22	21	21	10	14	8	6	8	3	4

Data from the UESRWWN are compiled and distributed by H.E. Bockelman, USDA-ARS located at the National Small Grains Germplasm Research Facility, Aberdeen, Idaho.

Lodging: 0 = standing, 9 = flat.

Winter Kill: 0 = none, 9 = complete.

Scab, septoria, leaf rust and stem rust: 0 = resistant, 9 = very susceptible.

9800145

per letter  
of 9/16/99  
10-8-99

Table 2. Performance of IL90-7514 and selected cultivars in the 1996 Illinois Variety Trial.  
Entries ranked by yield over four locations.

	Dixon Springs Survival (%)	Brownstown Survival (%)	Orr Center Yield (bu/A)	Urbana Survival (%)	Yield (bu/A)	Averages over locations			
						3 loc. Survival (%)	4 loc. Yield (bu/A)	4 loc. (bu/A)	4 loc. (lbs/bu)
IL 90-7514 <i>(Kaskaskia)</i>	73	62	53	73	67	67	75	64.4	70.4
Pio Brand 2571	67	62	47	72	67	43	74	52.2	68.8
Pio Brand 2540	73	57	47	74	73	43	68	54.4	68.2
Patterson	73	58	73	72	60	57	66	67.8	64.0
Howell	73	53	43	62	69	50	61	55.6	61.2
Pio Brand 2568	63	55	27	71	66	17	52	35.6	60.8
Cardinal	73	46	50	59	64	40	63	54.4	58.0
AgriPro Clemens	70	58	60	60	62	37	51	55.6	57.9
Clark	70	55	27	58	59	47	59	47.8	57.6
AgriPro Elkhart	63	61	20	54	63	27	49	36.7	56.7
Pio Brand 2548	60	47	30	59	63	20	55	36.7	56.0
Pio Brand 2552	63	62	37	59	67	7	35	35.6	55.8
Ernie	63	56	20	47	67	17	49	33.3	55.0
Madison	63	60	37	55	60	20	42	40.0	54.1
Caldwell	73	49	47	55	55	30	50	50.0	52.5
Wakefield	60	42	27	33	57	8	18	31.7	37.9
Jackson	47	36	7	18	47	3	11	18.9	27.9
AVERAGE	29	52.3	39	57.9	62.4	29	51.5	32.3	56.0
LSD (0.1)	9	5.6	19	6.8	5.0	9	5.7	--	--
CV (%)	23	7.9	36	8.7	6.0	23	8.2	--	--

per letter of  
9-16-99  
10-18-1999

980145

Table 3. Grain yield and test weight of IL90-7514 and selected cultivars in performance tests in Illinois, 1994-1997.

	1994				1995				1996				1997			
	Urbania		Brownstown		DeKalb		Urbana		Brownstown		Urbana		Brownstown		St. Jacob	
	Yield	Brownstown	Yield	Urbania	Yield	DeKalb	Yield	Urbania	Test	Yield	Test	Yield	Weight	Test	Yield	Weight
(bu/A)	(bu/A)	(bu/A)	(bu/A)	(bu/A)	(bu/A)	(bu/A)	(bu/A)	(bu/A)	(bu/A)	(bu/A)	(bu/A)	(bu/A)	(lbs/bu)	(bu/A)	(bu/A)	(lbs/bu)
IL90-7514 ('Kaskaskia')	99	91	94	79	50	86	72	77	59.7	108	59.6	99	60.0	80	89.6	79.3
Caldwell	94	86	83	50	39	71	49	69	55.1	81	57.5	89	57.5	84	68.5	70.5
Cardinal	83	88	72	32	41	74	42	63	55.4	82	57.7	95	56.3	73	59.7	71.6
Clark	91	78	66	62	49	74	49	72	55.7	79	57.5	78	56.4	76	70.3	72.9
Howell	92	85	79	49	49	67	55	59	57.5	80	60.2	92	58.7	81	69.3	69.7
P 2548	85	89	79	25	50	93	31	60	56.4	101	56.8	91	57.4	79	69.2	71.2
P 2571	94	88	76	76	65	101	77	86	54.3	86	56.7	92	57.1	81	60.4	73.0
LSD(0.05)	7.0	8.0	9.0	9.5	10.3	7.5	19.8	15.4	1.8	9.7	1.4	8.7	1.3	10.3	--	--
LSD(0.10)	6.0	7.0	8.0	8.6	9.9	6.3	16.6	12.9	1.5	8.1	1.2	7.3	1.1	8.6	--	--
CV (%)	4.9	6.4	7.4	9.9	12.5	6.2	23.5	14.9	1.9	6.8	1.5	6.1	1.4	8.3	--	--

Table 4. Disease resistance data for IL90-7514 and selected cultivars.

	BYDV				1995 Urbana				1995 Bmtwn				Septoria leaf blight				
	(94-'95 means)		Leaf	Scab	Leaf	Rust	Mildew	Powdery	Leaf	Rust	(93-94 mean)	Bmtwn	Bmtwn	Leaf	SBMV	1992	1993
	Stunting	Rating	(0-9)	(0-5)	(0-5)	(0-9)	(0-9)	(0-9)	(0-5)	(0-5)	(0-9)	(0-9)	(0-9)	(0-9)	(0-9)	(0-9)	
IL90-7514	15.5	5.6	1	4.1	3.0	2.4	0	4.3	0	4.3	3.0	4.2	0	4.3	3.0	4.2	3.0
Howell	16.5	5.6	4	4.9	3.6	3.6	4	5.3	--	--	2.1	0	0	0	0	0	0
Cardinal	21.8	5.8	3	4.9	1.2	4.0	1	6.8	3.5	3.6	1	1	1	6.3	--	4.4	5
Caldwell	23.2	6.5	0	0.8	5.1	2.0	0	--	0	--	6.3	0	0	0	0	0	5

BYDV stunting = Control hill height / inoculated hill height

BYDV rating: 0 = resistant, 9 = susceptible

Leaf and stem rust: 0 = resistant, 5 = susceptible

Scab, powdery mildew, SBMV, and septoria: 0 = resistant, 9 = susceptible

Table 5. Performance of IL90-7514 and selected cultivars in performance tests in Illinois, 1996.

Survival (%)	Rust (0-9)	1996 Advanced Nursery - Urbana						1996 Advanced Nursery - Brownstown						2 Loc. Averages			
		Heading (d after 4/30)	Height (in)	Scab Ined. (1-5)	Scab Sev. (1-5)	Test Weight (lbs/ bu)	Yield (bu/ A)	Survival (%)	6/5 Septoria (0-9)	6/13 Septoria (0-9)	Height (in)	Scab (0-9)	Test Weight (lbs/ bu)	Yield (bu/ A)	Survival (%)	Yield (bu/ A)	per cent of IL90-7514
									Septoria (0-9)	Septoria (0-9)	Height (in)	Scab (0-9)	Test Weight (lbs/ bu)	Yield (bu/ A)			
IL90-7514, Kash-Kid®	0.0	26	40.0	4.3	3.7	57.0	71.9	98.3	4.7	6.7	38.3	4.0	54.1	76.5	89.2	74.2	
Caldwell	46.7	1.0	27	35.0	4.0	3.3	48.5	49.1	86.7	6.0	8.3	35.7	4.0	53.9	68.8	66.7	
Cardinal	36.7	4.7	32	36.7	2.3	1.7	48.4	42.2	68.3	3.7	4.7	37.3	3.0	53.1	62.9	52.5	
Clark	40.0	2.0	25	32.0	4.0	4.3	49.1	49.3	65.0	4.7	7.0	34.3	2.3	55.8	72.3	52.5	
Howell	70.0	0.3	30	38.7	3.0	2.0	54.0	55.4	83.3	3.3	3.7	38.0	3.3	53.9	58.8	76.7	
Madison	20.0	5.7	29	34.0	3.3	3.0	47.1	22.5	50.0	2.3	4.0	35.3	5.7	49.2	56.9	35.0	
Patterson	66.7	1.0	24	36.0	4.3	4.7	51.5	62.3	96.7	5.7	9.0	35.0	3.0	56.5	71.5	81.7	
Ernie	14.0	7.0	28	29.3	2.0	1.0	50.1	20.2	33.3	3.0	3.7	31.0	2.3	54.4	71.1	23.7	
Glory	20.0	8.0	29	32.7	3.0	3.3	47.8	38.3	43.3	3.0	4.0	32.0	4.0	52.1	62.3	31.7	
Hopewell	83.3	0.7	27	33.7	4.3	2.7	53.0	59.1	88.3	4.0	6.3	35.0	3.3	53.4	73.1	85.8	
Pio 2548	6.7	0.7	34	28.3	1.7	1.0	43.8	31.0	40.0	4.0	4.7	31.0	2.7	52.3	60.4	23.4	
Pio 2510	33.3	0.7	32	32.0	2.7	1.0	45.6	42.0	55.0	3.7	5.0	31.7	4.7	52.3	57.6	44.2	
Pio 2571	56.7	0.0	25	33.3	3.7	2.3	52.7	76.5	63.3	2.0	3.7	33.7	2.3	56.2	86.1	60.0	
LSD (0.05)	14.8	2.3	1.9	2.1	0.9	1.0	3.3	19.8	21.2	1.4	1.4	3.2	0.9	2.6	15.4	--	
LSD (0.10)	12.4	1.9	1.6	1.8	0.8	0.8	2.8	16.6	17.8	1.2	1.1	2.7	0.8	2.2	12.9	--	
CV (%)	29.0	58.7	4.2	3.8	17.8	26.3	4.1	23.5	22.2	22.5	15.8	5.6	16.8	3.0	14.9	--	

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Table 6. Performance of IL90-7514 and selected cultivars in performance tests in Illinois, 1997.

Heading Date	Urbana						Brentwood						St. Jacob					
	Leaf Rust	SBMV			BYDV		(Early) (Late)	Septoria Yield			Septoria Yield		Mean	Mean	Mean	Yield		
		(0-9)	(gms)	(bu/A)	(0-9)	(0-9)		(0-9)	(bu/A)	(0-9)	(bu/A)	(in.)	(0-9)	(lb/bu)	(bu/A)			
IL90-7514 ('Kaskaskia')	4/30	24.6	0.0	4.24	108.4	2.5	8.5	7.0	35.7	4.0	99.3	2.9	80.2	42.2	3.5	59.8	96.0	
Caldwell	23.4	1.6	3.08	80.6	3.5	8.5	7.5	31.7	2.3	88.5	1.8	84.1	38.2	2.1	56.7	84.4		
Cardinal	27.5	0.0	3.13	82.3	3.0	5.5	4.5	13.7	2.0	94.7	1.3	72.8	40.3	1.7	56.5	83.3		
Clark	19.9	2.3	3.26	79.4	1.5	9.0	9.0	49.3	5.0	78.3	2.0	76.4	36.5	3.5	56.5	78.0		
Howell	26.8	2.6	3.65	80.4	3.5	7.0	6.0	13.7	2.7	91.7	1.1	81.2	40.9	1.9	58.8	84.4		
Madison	25.2	0.3	3.09	87.5	2.5	7.5	6.5	21.5	3.7	88.1	1.1	69.8	36.2	2.4	56.2	81.8		
Patterson	22.4	1.0	3.64	86.4	1.0	7.5	7.5	37.5	3.1	93.5	2.0	76.8	38.1	2.6	58.0	85.6		
Ernie	23.3	3.3	3.21	82.7	5.0	7.5	7.5	19.1	5.0	86.2	2.6	59.6	32.6	3.8	56.6	76.2		
Freedom	27.5	0.0	3.52	74.9	9.0	9.0	7.5	34.2	4.0	79.4	2.3	67.0	35.4	3.2	54.4	73.8		
Plo 2548	25.3	0.4	3.29	101.4	8.5	8.5	6.5	24.1	4.3	90.6	2.0	79.2	34.2	3.2	56.9	90.4		
Plo 2571	20.7	0.1	4.15	85.8	7.0	8.5	6.5	25.4	4.0	92.3	1.1	81.3	35.9	2.6	56.0	86.5		
LOC MEAN	24.7	0.8	3.4	88.6	4.5	7.9	6.9	27.0	3.3	88.7	1.9	76.8	37.4	2.6	57.6	84.7		
LSD (.05)	1.1	0.9	9.7						1.1	8.7	1.3	10.3						
CV (%)	2.7	72.1	6.8							43.6	8.3							

Per Lbs.  
of  
M.A.  
10-18-99

**Table 7. Yield (bu/A) of IL90-7514 and selected cultivars in the 1997 Illinois Variety Trial and Advanced Test.**

Variety	Advanced			Variety Trial			VT			
	Urb		Brentn	St.Jac.	Bvl	Brn	Dix S	Urb	Dekb	3 Test
	Yield	Yield	Yield	Yield	Yield	Yield	Yield	Yield	Average Yield	5 Test
IL90-7514 (Kos Kukia)	108.4	99.3	80.2	87.1	81.7	48.5	89.1	73.4	96.0	76.0
Pio 2540	96.0	100.9	93.9	95.4	85.2	66.5	88.6	80.7	96.9	83.3
Madison	87.5	88.1	69.8	96.7	74.4	49.1	83.9	63.3	81.8	73.5
Patterson	86.4	93.5	76.8	88.4	79.5	49.3	67.7	61.1	85.6	69.2
Caldwell	80.6	88.5	84.1	93.3	76.5	49.4	56.8	65.8	84.4	75.3
Cardinal	82.3	94.7	72.8	96.2	77.3	46.5	63.9	60.8	83.3	74.4
Howell	80.4	91.7	81.2	71.5	68.7	48.7	64.3	62.5	84.4	68.4
Grant	75.7	83.2	84.7	93.7	65.6	40.2	65.5	54.9	81.2	71.1
Ernie	82.7	86.2	59.6	81.2	71.9	40.8	71.8	67.8	76.2	64.0
Hopewell	63.9	93.1	80.2	87.1	72.1	32.6	64.0	54.8	79.1	66.7
Clark	79.4	78.3	76.4	90.1	67.4	33.8	63.9	56.3	78.0	62.3
Freedom	74.9	79.4	67.0	75.6	73.7	47.5	56.8	50.7	73.8	68.2
Average	88.6	88.7	76.8	87.2	76.8	47.4	72.9	67.4	84.7	70.3
LSD 0.10	9.7	8.7	10.3	12.0	8.9	10.0	7.2	7.4	9.8	8.0
CV, %	6.8	6.1	8.3	10.2	6.6	15.7	7.3	8.1	14.5	11.7

per bushel of 9-16-99  
max 10-18-99

98 00 14 51

98 00145

per letter of  
9-16-99  
MATH 10-18-1999

*Keweenaw*  
**Table 8. Milling and Baking Evaluations for IL90-7514 and Selected Cultivars.**

ENTRY	MILLING QUALITY SCORE	BAKING QUALITY SCORE	SOFT. EQUIV.	FLOUR YIELD	FLOUR PROT.	MICRO AWRC	COOKIE DIAM.	TOP GR.
<b>1997 Crop</b>								
<b>IL90-7514</b>	<b>103.8 A</b>	<b>103.1 A</b>	<b>65.5</b>	<b>71.6</b>	<b>8.2</b>	<b>65.6</b>	<b>17.6</b>	<b>6.0</b>
Cardinal	103.7 A	102.7 A	54.6	72.0	9.1	54.8	17.6	5.0
Caldwell	100.7 A	101.0 A	63.6	71.0	7.4	56.4	17.5	5.0
<b>1996 Crop</b>								
<b>IL90-7514</b>	<b>90.2 C</b>	<b>88.6 D</b>	<b>58.2 *</b>	<b>69.4 Q</b>	<b>8.9</b>	<b>56.4</b>	<b>17.6</b>	<b>3.0</b>
Howell	96.8 B	95.9 B	59.6 *	70.7	8.0	55.2	17.7	5.0
Cardinal	87.8 D	89.4 D	57.7 *	69.2 Q	10.1	52.6	17.3 *	1.0
Caldwell	100.0 A	100.0 A	63.5	71.2	8.8	55.0	17.7	4.0
<b>1994 Crop</b>								
<b>IL90-7514</b>	<b>95.1 B</b>	<b>91.1 C</b>	<b>55.1 *</b>	<b>71.1 *</b>	<b>8.7</b>	<b>66.8</b>	<b>--</b>	<b>--</b>
Howell	97.7 B	89.6 D	52.0 Q	71.8	10.1 *	55.6	--	--
Cardinal	101.1 A	95.8 B	53.2 Q	72.9	9.0	52.7	--	--
Caldwell	99.6 B	99.6 B	60.8	72.4	8.7	55.5	--	--
<b>1993 Crop</b>								
<b>IL90-7514</b>	<b>89.7 D</b>	<b>89.4 D</b>	<b>61.6 *</b>	<b>71.6 Q</b>	<b>6.1</b>	<b>56.4 *</b>	<b>18.1</b>	<b>4</b>
Howell	85.3 D	75.5 F	59.6 *	70.7 Q	6.8	58.0 Q	17.7 *	5
Cardinal	96.5 B	85.5 B	60.2 *	73.7	7.2	53.7	17.6 Q	5
Caldwell	100.0 A	100.0 A	65.1	73.9	6.7	54.1	18.1	--
<b>1992 Crop</b>								
<b>IL90-7514</b>	<b>97.3 B</b>	<b>91.6 C</b>	<b>48.7</b>	<b>73.7</b>	<b>9.2 *</b>	<b>56.7</b>	<b>17.2</b>	<b>2</b>
Howell	-- --	-- --	--	--	--	--	--	--
Cardinal	90.4 C	84.7 E	46.3 *	72.6 *	9.4 Q	54.1	16.7 Q	2
Caldwell	100.0 A	100.0 A	50.7	74.1	8.1	55.5	17.3	4
<b>1991 Crop</b>								
<b>IL90-7514</b>	<b>97.9 B</b>	<b>86.9 D</b>	<b>50.8 *</b>	<b>74.5</b>	<b>10.3</b>	<b>56.1</b>	<b>--</b>	<b>--</b>
Howell	-- --	-- --	--	--	--	--	--	--
Cardinal	103.1 A	98.6 B	49.2 Q	76.2	10.7	53.4	--	--
Caldwell	98.8 B	103.2 A	56.0	74.8	11.0	54.0	--	--

Notes: For milling and baking quality scores: A = best , F = worst,

For other milling and baking parameters: \* = close to questionable range, Q = in questionable range.

U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICEEXHIBIT E  
STATEMENT OF THE BASIS OF OWNERSHIP

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S)  The Board of Trustees of the University of Illinois	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER  IL90-7514	3. VARIETY NAME  To be determined <i>Kaskaskia</i>
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)  506 S. Wright Street Urbana, IL 61801	5. TELEPHONE (include area code)  (217) 333-1920	6. FAX (include area code)  (217) 244-2282
7. PVPO NUMBER  <i>9800445</i>		
B. Does the applicant own all rights to the variety? Mark an "X" in appropriate block. If no, please explain.  _____ _____ _____		
<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		
9. Is the applicant (individual or company) a U.S. national or U.S. based company? If no, give name of country _____ <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		
10. Is the applicant the original owner? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO If no, please answer the following:  a. If original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. national(s)? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO If no, give name of country _____  b. If original rights to variety were owned by a company, is the original owner(s) a U.S. based company? <input type="checkbox"/> YES <input type="checkbox"/> NO If no, give name of country _____		
11. Additional explanation on ownership (if needed, use reverse for extra space):  See reverse		

## PLEASE NOTE:

Plant variety protection can be afforded only to owners (not licensees) who meet one of the following criteria:

- If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.
- If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.
- If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definition.

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 10 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

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**11. Additional explanation of ownership:**

The complex cross, generation advance, selection, testing and evaluation, repurification, and multiplication were all performed by the applicant breeder (F.L. Kolb) or his predecessor (C.M. Brown) or technical assistants on the property of the University of Illinois. The variety is intended for use as a public variety in the United States.

Ownership of the public variety IL90-7514 (variety name to be determined) has been transferred by assignment from the breeder to the University of Illinois, whose official legal name is "The Board of Trustees of the University of Illinois". See attached assignment, which is being sent herewith for recording in the Plant Variety Protection Office.

On Assignment  
GARDNER